BELKIN®

AC Anywhere

Power Inverter
(Class II product)

F5C412uk140W
F5C412uk300W

User Manual

F5C412uk140W, F5C412uk300W

Please read the installation and operations instructions before using the Power Inverters

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AC Anywhere – Instructions and Information:

Belkin Components manufactures a line of DC to AC Inverters with 140 and 300-Watt capacities. These Inverters offer advanced technology, dependable operation and will provide years of reliable service when used in accordance with our operating instructions.

Belkin's Inverters convert low voltage, direct (DC) current to 240 volts alternating (AC) household current. Depending on the model and its rated capacity, Belkin Inverters draw power either from standard 12-volt automobile and marine batteries, or from portable, high-power 12-volt sources.

The Belkin inverter can not be used with 24 volts (trucks) battery power.

Important Information:

This manual will provide you with directions for the safe and efficient operation of your Belkin 140-Watt, or 300-Watt Inverter. Read the manual carefully before using your new Belkin Inverter and keep the manual on file for future reference.

Note:

- *Your Belkin Inverter is designed to operate from a 12-volt power source only. Never attempt to connect your Inverter to any other power source including any AC power sources.*
- *240 volts of current can be lethal. Improper use of your Belkin Inverter may result in property damage, personal injury, or loss of life.*

Getting Off to a Good Start:

In order to ensure that the capacity of your Belkin Inverter is sufficient to meet the required start up load, you must first determine the power consumption of the equipment or appliance you plan to operate.

Power consumption is rated either in wattage or in amperes. Information regarding the required "watts" or "amps" is generally printed on most appliances or equipment. If the power consumption is rated in amps, multiply the number of amps by 240 volts(AC voltage) to determine the comparable wattage rating. As a general rule, you can determine the *required start-up load* by multiplying the wattage rating by 20.

Don't Push It:

Although your Belkin Inverter has the capacity to provide power output equal to approximately two times its rated wattage capacity for a very brief period, it is designed to operate equipment with start-up load wattage ratings no higher than its own *maximum continuous wattage rating*.

Troubleshooting:

Problem:	Solution:
Equipment has a high start-up surge.	*Turn Inverter power switch OFF (O) and then ON (I) again until the Inverter powers your device. Repeat as necessary to get your device running.*
Automotive system requires ignition to be on.	*Turn ignition key to accessory position.*
Battery voltage below 10 volts.	*Recharge or replace battery.*
Equipment being operated draws too much power.	*Use a higher capacity Inverter or do not use this equipment.*
Inverter is too hot (thermal shutdown mode).	*Allow Inverter to cool. Check for adequate ventilation. Reduce the load on the Inverter to rated continuous power output.*
Inverter fuse is blown.	*Replace fuse according to guidelines in "Don't Blow a Fuse" section of this manual. Make sure that the Inverter is connected to power source with correct polarity.*
Poor or weak battery condition.	*Replace battery.*
Inadequate power being delivered to the Inverter or excessive voltage drop.	*Check condition of cigarette lighter plug and socket. Clean or replace as necessary.*

Warning:

- Improper use of this inverter can cause personnel injury, property damage, and or loss of life.
- To avoid potential property damage, do not leave this inverter or any device operating unattended in vehicle.
- Disconnect power to the inverter when it is not in use.
- Do not use or place this inverter near flammable materials or any locations, which accumulate flammable fumes.
- If the external flexible cable or cord of this power inverter is damaged, the manufacturer or his service agent or a similar qualified person shall replace it in order to avoid a hazard.
- Regularly check that the input and output connections are tight. Loose connections can generate harmful heat and/or damage the inverter or power source.
- This product is not recommended for use with inductive loads, such as florescent lamps, compressors & pumps. Otherwise, permanent damage may result.
- This is not a toy. Keep away from reach of children.

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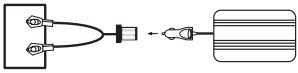
To connect the Belkin 300-Watt Inverter directly to the 12-volt power source (battery), follow the steps as outlined below:

1. Push the adapter plug leading from the Inverter firmly into the Direct-Connect Cable socket.
2. Properly identify the positive (red) and negative (black) terminals on the 12-volt power source and make certain that the terminals are clean and dry.
3. Connect the RED alligator clip to the positive (+) terminal on the power source, and the BLACK alligator clip to the negative (-) terminal on the power source.
4. Plug your equipment or appliance into the AC receptacle on the Inverter.
5. Turn the Inverter's power switch to the ON position.
6. Confirm that the LED power indicator light on the Inverter is glowing GREEN. This means the Inverter is "ready for action".
7. Turn on the equipment or appliance.



Specifications

	F5C412uk140W	F5C412uk300W
Max.Continous Power	140 Watt	300 Watt
Surge efficiency (Peak)	300 Watt	500 Watt
No Load Current Draw	<0.1 Amps	<0.2 Amps
Waveform	Modified Sine Wave	
Operating Input Voltage Range	11-15 volts DC	
Output Voltage Range	AC 240V ±5%	
Automatic Input Power Shutdown	≤10.4 Volts - ≥15 Volts	
Output Frequency	50 Hz ±3Hz	
Fuse (Amperes)	20 A	30 A
Space Fuse (Amperes)	20 A	30 A
Lenght	160 mm	160 mm
Width	90 mm	90 mm
Height	65 mm	65 mm
Weight	680 g	680 g
Class II product	yes	yes
Polarity	negative (-) to ground	negative (-) to ground
Low battery alarm	10.4 Volt	10.4 Volt
Low battery shutdown	9.8 Volt	9.8 Volt

Installation:

Power Source Requirements

The power source must provides 12 Volts DC and must be able to supply the necessary current to operate the load. The power source may be a battery or a well-regulated 12V DC power supply. As a rough guideline, divide the power consumption of the load (in watt) by 12 (the input voltage) to obtain the current (in amperes) the power source must deliver. Example: Load is rated at 120 Watts; the power source must be able to deliver: (220/12) = 18.3 Amps

Making the Connection:

The Belkin 140 and 300-Watt Inverters are designed to connect to your 12-volt battery through the cigarette lighter socket on your dashboard. To connect and use these Inverters, follow these easy steps:

1. Remove the cigarette lighter and push the adapter plug firmly into the socket. Make sure both the socket and adapter plug are clean and dry.
2. Plug your appliance or equipment into the AC receptacle on the Inverter.
3. Turn the Inverter rocker switch to the ON (l) position.
4. Confirm that the LED Power Indicator light on the Inverter is glowing GREEN. This GREEN light indicates that your Inverter is “ready for action.”
5. Turn on your equipment for use.

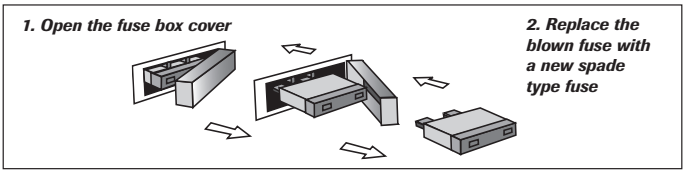
Don’t Blow a Fuse:

All Belkin Inverters are equipped with a spare fuse in case the original fuse should blow. Most blown fuses are the result of reverse polarity or a short circuit within the appliance or equipment being operated. With reasonable care, it should not be necessary to replace the fuse in your Inverter.

To Replace a Fuse:

Belkin 140-Watt / 300-Watt Inverter

First, remove the power cord from the cigarette lighter socket. You will find fuse compartment is easily accessed at the back of the unit underneath the “lift-up” cover. Pull the blown fuse out, and insert the replacement. It is important to remember that to replace of fuse of the same type and rating as indicated. Make certain to correct the source of the overload that caused the blown fuse before turning your Inverter back ON.



The Power Source:

When the engine is off, most batteries will provide an ample power supply to the Inverter for one to two hours. The actual length of time is a function of several variables including the age and condition of the battery, and the power demand being placed on it by the equipment being operated.

If you are using the Inverter while the engine is off, we recommend you start the engine every hour and let it run for approximately 10 minutes to recharge the battery. We also recommend that the device plugged into the Inverter be turned off before turning over the engine.

Although it is not necessary to unplug the Inverter when starting the engine, the Inverter may momentarily cease operation as the battery voltage decreases. When the Inverter is not supplying power, it draws very low amperage from the battery (< 0.1 amps to < 0.2 amps depending on the model) and may be left connected to the battery for up to 3 hours. However, we recommend the Inverter always be disconnected when not in use.

Note:

- *Inverters will not operate with certain automotive systems unless the ignition is on. If the Inverter is not generating power, try turning the ignition to the accessory position.*

Automatic Shut-down and Related Safety Features:

The Belkin 140 and 300-Watt Inverter models have a unique LED indicator warning light system that operates in conjunction with the automatic shut down feature. This indicator light operates as follows:

RED - Overload/Low Battery

Your Inverter will shut down automatically when any of the following problems occur:

1. The power input from the battery drops below 10.4 volts.
2. The power output from the battery exceeds 15 volts.
3. The continuous draw of the device exceeds the design parameters of the Inverter.

Battery Level Indicator	
Approximate State-of-charge	Open Circuit Battery Voltage
100%	13.7
75%	12.7
50%	11.7
25%	10.7
0%	< 10.6

Additional Safety Features:

1. Automatic shutdown when the internal circuit temperature exceeds standard design parameters for safe operation.
2. Continuous audible alarm:

a. When the input power from the 12-volt power source drops to 11 volts.

b. When the internal circuit temperature exceeds standard design parameters for safe operation.

In the event of automatic shut-down or continuous alarm, turn the Inverter rocker switch to the OFF (O) position until the source of the related problem has been identified and resolved.

Note:

- *The Belkin 300W model is equipped with a cooling fan that is only designed to run continuously while the Inverter is operating. Automatic shutdown caused by excess circuit temperature occurs when the cooling fan is unable to maintain the design parameters for safe operation of the Inverter.*

To maintain your Inverter in proper working condition, note the following important safety precautions:

- MOISTURE - Keep the Inverter dry. Do not expose it to moisture.
- HEAT – The ambient air temperature should be between 50°F and 80°F, (approx. 17°C - 27°C). Avoid placing the Inverter on or near heat source. Do not place the Inverter in direct sunlight.
- VENTILATION – In order to disperse the heat generated while the Inverter is in operation, keep it well ventilated. While in use, maintain several inches of clearance around the top and sides of the Inverter.

***Caution:* Most automobole cigarette lighter circuits use fuses rated at 10-20 Amps.**

Battery Direct-Connect Cables:

For the Belkin 300-Watt Inverter Only – F5C412uk300W

Note:

- *If the equipment or appliance you intend to operate requires more than 150 Watts of continuous power, the Belkin 300-Watt Inverter should be connected directly to the power source using the Battery Direct-Connect Cables. Failure to do so may result in serious damage to the power cord or to the cigarette lighter socket wiring in your vehicle.*

CAUTION:

Applicable only for the : F5C412uk300w

FOR USE WITH CIGARETTE LIGHTER PLUG:

WARNING: *If more than 150 Watts of AC power are required from the Inverter, DO NOT connect the Inverter through the vehicle's cigarette lighter socket. THIS WILL OVERHEAT THE WIRES AND COULD CAUSE A FIRE. When using the devices that require a TOTAL of 150 Watts or more, connect the Inverter directly to the vehicle's battery terminals using the provided Battery Clip.*

1. Insert Inverter's Cigarette Lighter Plug into vehicle's cigarette lighter socket.

Note: *Make sure Inverter is not ON when starting vehicle. If ON, a voltage surge from the vehicle could damage the Inverter or device lugged into it.*

2. Turn Inverter "ON" (Switch is located at front of unit, next to 220V electrical sockets). If the LED Status Light on Inverter illuminates GREEN, then the unit is functioning properly. If the LED Status Light on the Inverter illuminates RED, turn unit off immediately and check all connections.

3. Plug device(s) (rated lower than 150W) into one of the 220V electrical sockets. Switch appliance(s) ON to begin operation. As long as LED Status Light on front panel of Inverter is GREEN, the device may be operated as normal.

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CONNECTION TO 12V BATTERY USING BATTERY CLIPS

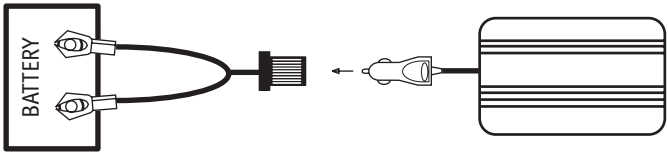
1. Insert the Inverter's Cigarette Lighter Plug into the socket on the Battery Clip Connection Cable.

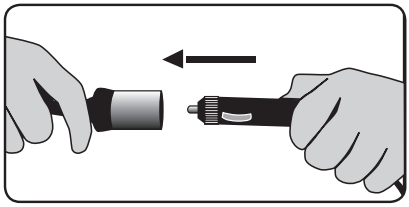
2. Connect the Red (+) Battery Clip to 12V battery's red (+) terminal. Connect the Black (-) Battery Clip to the battery's black (-) terminal.

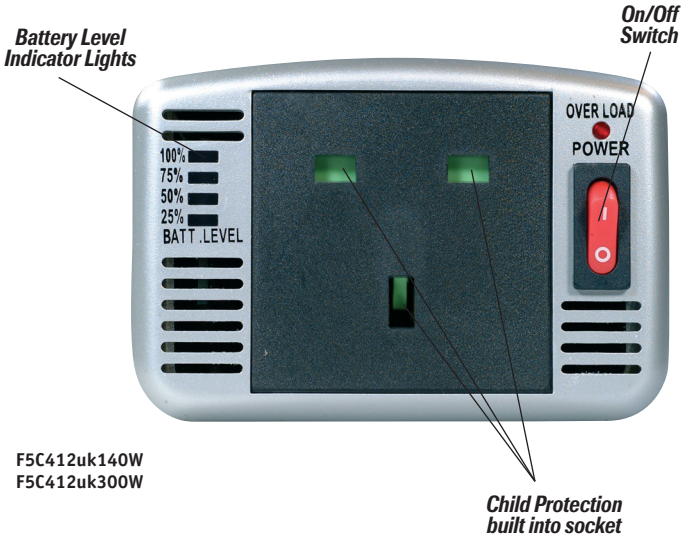
3. Turn Inverter "ON". If the LED Status Light on Inverter illuminates GREEN, the unit is functioning properly. If the LED Status Light n the Inverter illuminates RED, turn unit off immediately and check all connections.

4. Plug 220V appliance into one of the Inverter's 220V AC Electrical Sockets. Switch appliance ON to begin operation. As long as Inverter's LED Status Light remains GREEN, the device may be operated as normal.

Note: *Make sure Inverter is not ON when starting vehicle. If ON, a voltage surge from the vehicle could damage the Inverter or device plugged into it.*







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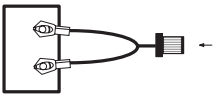

Caution: ***Always match the "continuous wattage rating" of your device with the DC to AC Inverter capacity for best results.***

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